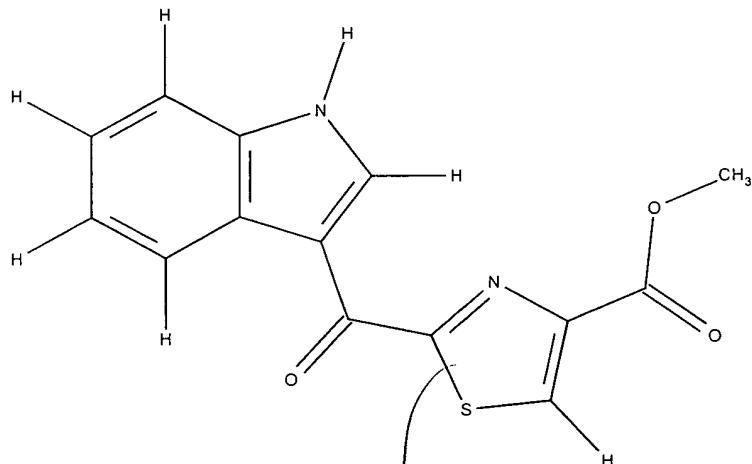


CLAIMS

We claim:

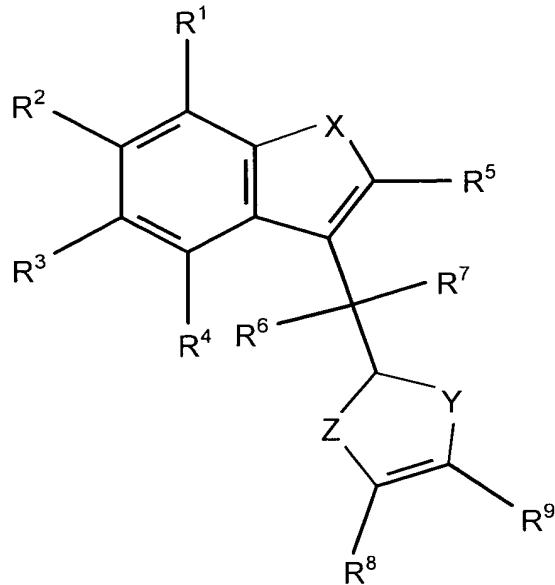
1. A preparation of the endogenous Ah receptor ligand.
2. The preparation of claim 1 wherein the ligand has the following

formula:



3. The preparation of claim 1 wherein the preparation is at least 90%
4. The preparation of claim 3 wherein the preparation is at least 95%
5. The preparation of claim 1 wherein the ligand is isolated from animal
s.

6. A preparation of Ah receptor ligand analog, wherein the analog is of the formula:



Wherein

R¹, R², R³, R⁴, R⁵, and R⁸ are selected from the group consisting of H, lower alkyl (1-

5 carbons), Br, F, Cl, O-acyl (1-5 C) and OR¹⁰ where R¹⁰=H, lower alkyl (1-5 C);

R⁶ and R⁷ taken together may be O; or

when R⁶=H, then R⁷ can be H, OH, Br, F, Cl, OR¹¹ where R¹¹=alkyl (1-5 C); or

when R⁷=H, then R⁶ can be H, OH, Br, F, Cl, OR¹¹ where R¹¹=alkyl (1-5 C);

O

||

R⁹ can be O—C—R¹², wherein R¹² is selected from the group consisting of alkyl (1-5

C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or

O

||

R⁹ can be —C—O—R¹³, where R¹³ is selected from the group consisting of alkyl (1-5

C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or

O

II

R⁹ can be $-C-R^{14}$, where R¹⁴=is selected from the group consisting of alkyl (1-5

C), fluoromethyl, difluoromethyl, and trifluoromethyl; or

OH

I

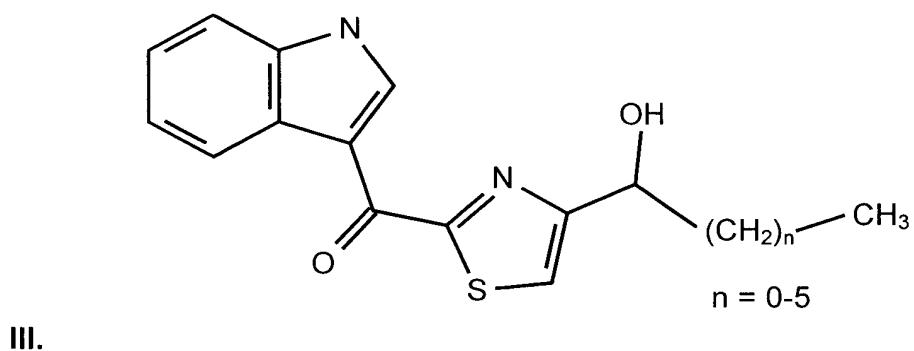
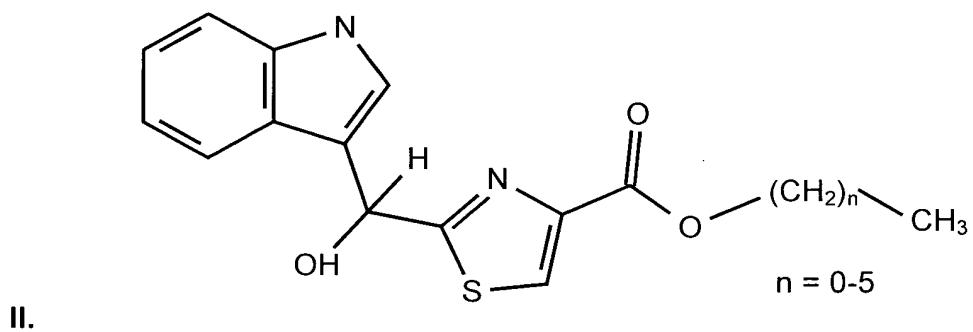
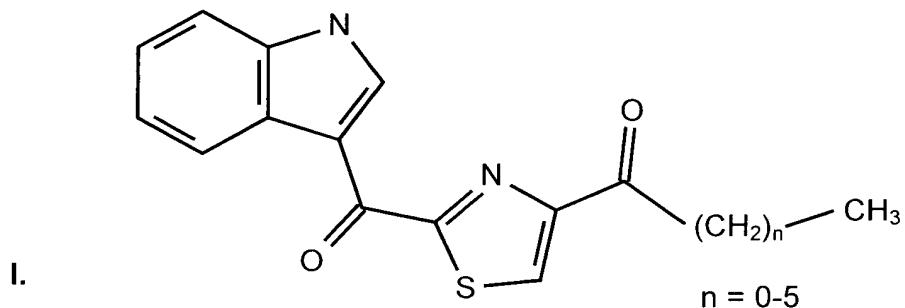
R⁹ can be $-C-R^{15}$, where R¹⁵ is selected from the group consisting of alkyl

(1-5 C), fluoro methyl, difluoro methyl, and trifluoro methyl, and

X, Y, Z are selected from the group consisting of C, N, O, and S.

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7. A preparation of Ah receptor ligand analog, wherein the analog is selected from the group consisting of I, II and III, wherein:



8. A method of preparing endogenous Ah receptor ligand comprising the steps of:

- a) obtaining and homogenizing an animal organ, wherein the organ contains the Ah receptor ligand, wherein a homogenate is formed,
- b) extracting the homogenate of step (a) with a solvent, wherein an extract is formed,
- c) heating the extract, and
- d) purifying the ligand through a chloroform gradient.

9. The method of claim 8 wherein the animal organ is selected for the group consisting of lung, liver, brain, bone, and muscle.

10. The method of claim 8 wherein the extraction is with methanol.

11. The method of claim 8 wherein the extract is flushed with nitrogen gas, stirred and centrifuged.

12. The method of claim 8 wherein the extract is heated at between 90°C-110°C with H₂SO₄.

13. The method of claim 8 wherein the extract is purified through silica batch purification.

14. The method of claim 8 wherein the ligand is further purified on HPLC columns.

15. The method of claim 8 further comprising the step of determining ligand activity.